Program:

AudioEye Electronic Website

Congressman J.D. Hayworth

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Enclosures:
- Rep. Hayworth's Dear Colleague introducing AudioEye Electronic.
- AudioEye Electronic executive summary.

Found at www.gopsecretary.gov:
- AudioEye PowerPoint Presentation

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Congress of the United States
House of Representatives

September 7, 2005

Dear Colleague:

I am excited to be able to share with you some ground-breaking technology I use on my congressional website to assist constituents who are visually impaired.

According to the National Federation for the Blind, an estimated 1.1 million people in the U.S. are blind. 6.5 million Americans age 55 or older experience some form of vision loss. Approximately one-third of U.S. adults aged 18 to 64 have trouble reading ordinary newsprint!

In 1998, Congress amended the Rehabilitation Act to require federal agencies to make their electronic and information technology accessible to people with disabilities. AudioEye, based in my congressional district, has developed a program that literally allows users to surf the net by sound.

AudioEye is its completely free for the user, and does not require the user to have special software or hardware because AudioEye is implemented by the website.

Unlike screen readers, AudioEye is simple to use. It's just like a voice mail system or the ever-popular moviefone or calling the pharmacy to refill a prescription. All the user needs to do is listen to audio prompts and press the numbers on their keyboard to make selections.

This is just the beginning of what is to come in the second generation of Internet technologies and will bring an end to the "silent era" of the Internet.

To see first-hand how this technology can enhance your official website and assist your vision-impaired constituents, please take a moment to visit my web site at http://hayworth.house.gov. If you are interested in more information on AudioEye, please contact their CEO, William O'Conor at woconor@audioeye.net or Stephen Briggs in my office at 5-2190 or stephen.briggs@mail.house.gov.

Best regards,

J. D. Hayworth
Member of Congress

JDH:sb

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audio eye
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Executive Summary

Audioeye ("The Company") is a provider of breakthrough patent pending tone and keystroke technology that will empower any web-site owner to allow their clients to 'surf by sound'. The elderly, blind, low vision, learning disabled and non-English speakers have not fully participated in the Internet revolution because of a lack of affordable, easy-to-use internet navigation tools AudioEye is the first solution of it its kind to solve Internet accessibility problems with streaming audio/keystroke navigation, and is a category creating technology.

AudioEye's media creation and content management software allows website owners to faithfully render Internet sites in completely audio format. The Company's business model has clients (website owners) licensing the AudioEye application at an enterprise or website level for an annual subscription which provides profitable and predictable growth. This is similar to Adobe *Acrobat*, removing the burden from Internet users to license the software, and targeting Site owners. The AudioEye player is then free to site visitors

The target market opportunities for the AudioEye technology are numerous due to recent government legislation, the growth of the visually impaired population, growth of the Spanish speaking market, the graying of America with internet experience, online education, and special education to name a few. Audioeye is focusing our marketing efforts on web site owners in the following three groups:

- Government organizations mandated by Section 508 of the Rehabilitation Act of 1998 to provide access to individuals with disabilities to and use of information that is comparable to those without disabilities
- Fortune 1000 companies targeting visually impaired or non-English speaking markets
- Universities, Colleges, and other educational institutions.

Fully staffed, Audioeye is forecast to do $2.4m in revenue on sales of $6.3m in its first full operating year, and has tremendous uptake over the next three. Clients currently subscribing to or trialing the software include Congressmen JD Hayworth, Pima Community College, and a number of national and regional special interest groups.

With product and services in place, AudioEye is embarking on a capital raising effort to facilitate a global product launch, and to support continuing business and software development efforts. Present ownership is approximately 50% Management and 50% by an outside company. The Company is looking for $2-$3m in capital that will be generated by the sale of an agreed upon percent of the company holdings, diluting current shareholder holdings proportionally.

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The Market Opportunity

The target opportunities are numerous due to recent government legislation, the existing visually impaired population, growth of the Spanish speaking market and a graying of America with internet experience, online education, special educations to name a few. The elderly, blind, low vision, learning disabled and non-English speakers have not fully participated in the Internet revolution because of a lack of affordable, easy-to-use internet navigation tools. First-generation Internet technology, built entirely around visual cues, is the equivalent of the "silent era" of film production. The technology and bandwidth exists for a second Internet revolution.

Access to Information is a Right

Access to information is now a fundamental right of citizenship and a key component of personal development. The Internet represents a one-of-a-kind empowerment tool for the disabled community – a gateway to educational and economic opportunity and a place for social interaction. According to the National Federation for the Blind, an estimated 1.1 million people in the U.S. are blind. Each year 50,000 more will become blind from things such as Glaucoma, cataracts, and diabetes. There are 76 million baby boomers nearing retirement age. 6.5 million Americans age 55 or older experience some form of vision loss ("low vision"). By 2030 this number is estimated to double.

In February 2001, President George W. Bush announced his New Freedom Initiative to tear down barriers faced by Americans with disabilities. Included in the program is $120 million over three fiscal years (FY 2002 through FY 2004) earmarked to promote the development of assistive and universally designed technology. AudioEye is universal assistive technology. Section 508, an amendment to the Rehabilitation Act of 1973, requires that individuals with disabilities, who are members of the public seeking information or services from a Federal department or agency, have access to and use of information and data that is comparable to that provided to the public without disabilities In addition, the federal government requires vendors selling to the government be Section 508 compliant, unless covered by a provable exception.

The Instructional Materials Accessibility Act of 2002 (H.R. 4582 and S. 2246) is aimed at an efficient system for acquiring and distributing instructional materials in a variety of specialized formats, including Braille, synthesized speech, digital text, digital audio, and large print. "Far too often," said Senator Christopher Dodd, "blind and visually impaired students must wait months while their local school districts convert their textbooks into Braille, and at the same time school districts face exorbitant costs for these conversions."

In the private sector, the National Federation for the Blind sued America Online in 1999, saying the Internet service's proprietary software interfered with the ability of blind people using a screen reader to access the AOL system. The National Council on Disability has recently issued a report recommending that The Americans with Disabilities Act of 1990 be amended to cover the private sector Internet.

Internet Accessibility for Special Education and non-English Speaking Instruction
There are 6.6 million children in the United States receiving some form of special education instruction. AudioEye's flexibility is crucial for special education teachers who must often address the diverse needs of students with learning disabilities, vision impairments, autism, and Tourette's syndrome within a *single* classroom curriculum environment. Since AudioEye is network-based, children can seamlessly utilize the browser, and all its functionality, across all their potential internet points of entry – computer lab, library or home.

We define "Internet accessibility" to include addressing the needs of non-English speakers as well. While 12% of the U.S. population or 33.5 million people are Hispanic (the nation's largest minority group), Spanish language sites still only make up single digits of all the content on the Web. Yet the research services unit of Hispanic Business Inc. found that U.S. Hispanic purchasing power grew 8 percent to almost $540 billion in 2002, swelling to $638 billion by 2010. AudioEye gives site owners an easy way to make their web offerings culturally relevant to the Hispanic community.

AudioEye has application for sighted users
According to a study commissioned by Microsoft and conducted by Forrester Research, approximately one-third of U.S. adults aged 18 to 64 have trouble reading ordinary newsprint. This is particularly problematic for an "unwired" Internet world where users are forced to read text on the small footprint display of internet-enabled wireless devices such as cell phones

Audioeye has both powerful potential commercial and military mobility-enhancing applications. A variety of tasks, from everyday activities like driving to intense battlefield or emergency services situations, demand extended visual focus and concentration - and are therefore not conducive to safely receiving visual cues from a wireless device. The Company intends to work closely with wireless carriers, automotive OEM's, on-board device manufacturers, defense contractors, satellite radio providers, and wireless mesh network manufacturers to promote wireless integration of the technology.

Aside from mobility, AudioEye also facilitates non-computer multi-tasking. Many simply feel overburdened by the demands of work-related computer usage and are reluctant to interact with the Internet for extensive reading. The internet has also become so content rich with original breaking news, opinion blogs, alternative press, and premium services that many people simply don't have time or opportunity to read everything they would like to regularly access.

The AudioEye browser enables users to perform simple lifestyle tasks like cooking dinner or paying bills while listening to internet content they would not otherwise have the time or opportunity to enjoy. This capability allows a variety of opinion, newspaper, news and information sites to effectively create a radio-like broadcast from their existing text-based site content.

Products and Services:

AudioEye's media creation software, standards-based technology built on the Microsoft.Net platform, combines different types of media files into one formatted navigation system. Web site owners may choose to outsource conversion and audio navigation updating to AudioEye under an ASP arrangement, or they can license the software for a self-managed solution. The subscription includes an easy-to-use content management system that requires little additional effort on the part of webmasters and allows sites to maintain their existing hosting solutions and security protocols. An initial site analysis is conducted, mapping each menu selection and content item to a tree-like hierarchy. The site's home page and main menu navigation sit at the top of the hierarchy.

Most websites were originally created with little or no awareness of disability access options. Web Designers forgo some of the richest content presentation to adhere to screen reader accessibility. In light of the regulatory requirements for U.S. federal government sites and the legal risk and negative publicity for corporations, the mandate to make such sites accessible has led to enormous expense in retrofitting these designs-including adding electronic "ramps" after the designs were completed. Even after the modifications, a majority of sites are still difficult to navigate using traditional technologies.

Site owners utilize live, human pre-recorded audio, or the latest Text-To-Speech (TTS) engines within the AudioEye system to create a mirror audio image of their existing text-based site. Because of the focused development efforts of firms like IBM, Microsoft and AT&T, Text-to-Speech capabilities have evolved dramatically in naturalness, variety and intelligibility. When using Text-to-Speech capabilities, operators simply cut and paste text into the AudioEye administrative panel and then select from a variety of voices and languages including English or Spanish.

Audio is very simple for site owners to create and maintain, and it is very intuitive for end-users. When entering an AudioEye-enabled website, end-users hear a prompt on the existing visual home page alerting them that they can experience the same site in audio format by pressing the number "1" key. By making that selection, the AudioEye Player will load and "speak" the menu option choices available or "read" specific content. The "number" keys allow users to select specific menu items or content. The "arrow" keys allow users to go back, forward, or replay specific menu or content items. The "escape" key allows users to exit AudioEye and return to the visual home page.

Possible limitations in adoption of Audio-eye are that the technology must be turned on…i.e.: a site must be AudioEye "enabled". Secondly, because of digital rights' management issues, site owners can't include audio links to/conversions of 3rd part content they don't own. Thirdly, since AudioEye relies on streaming media technology, the user must have access to a high-speed internet connection for an optimal experience. With the emergence of critical mass in residential broadband usage, this has become less of an obstacle. Users must also disable pop-up blocking software to allow the AudioEye player to pull up in front of the text pages.

Competitive Advantage

AudioEye is category-creating technology, the first solution of it its kind to solve Internet accessibility problems with streaming audio/keystroke navigation. Print impaired individuals currently utilize a wide array of accessibility technologies including refreshable Braille displays which can translate information on a computer screen into Braille that the user reads on a specially adapted keyboard, Braille embossers (Braille printers), external voice synthesis, screen magnifiers, and closed circuit televisions (CCTVs) which can magnify print up to 48 times the original size. The most common application used to access the Internet is screen-reading software such as Freedom Scientific's JAWS, GW Micro's Window-Eyes , or less-costly Spanish language versions such as Tiflowin.

However screen reader technology, which is highly effective for every day uses like word processing, have not kept pace with the complexity of the Internet. They frequently "hang" on flash, animation and other graphics. They also do not work well on content-heavy sites or those with complicated navigational menus. Screen readers are restricted entirely to presentation of content in redundant computer-generated voices, thereby restricting retention. Finally, screen readers were not designed with the needs of students (too complex to use) or the budgets of schools or low-income families in mind.

Several firms have developed Text-to-Speech software that uses voice synthesis from firms such as AT&T Natural Voices or Cepstral to create spoken audio from text. Users can listen immediately, or save to .wav or MP3 files to hear later. All of these solutions require users to manipulate a mouse and do not assist with Internet navigation to content, as specifically addressed by AudioEye.

Current Technology versus Audioeye

Current technology has a cost burden to individual users to purchase additional hardware such as a screen readers or magnification devices. As President George W. Bush noted in a July 2001 speech, "Personal computers configured with assistive technology can cost anywhere from $2,000 to $20,000."

Unlike most accessibility technologies, AudioEye only requires an Internet-enabled device and connectivity to the Internet. AudioEye employs a software license model, similar to Adobe *Acrobat*, removing the burden from Internet users. Site owners license the AudioEye publishing software to enable audio navigation of their content. The AudioEye player is then free to site visitors.

AudioEye's proprietary, Patent Pending technology

Internet users are familiar with streaming media files accessed through *Real Networks* or the *Windows Media Player*. These files load, play, and finish unless stopped, paused, fast-forwarded, etc. Once the AudioEye browser is engaged by the user, the stream is live and "listening" at all times for subsequent keystroke commands AudioEye's ability to keep the streaming connection "alert" and awaiting a keystroke command even after

extended periods of inactivity, represents a significant breakthrough in streaming technology. This discovery represents the "secret sauce" behind the AudioEye technology and forms the basis of the firm's patent application.

AudioEye compliments other technology in the text-to-speech area

Over the last five years, there has been extensive development and advancement in the areas of text-to-speech (TTS) engines and voice recognition for use primarily in call centers and medical transcription. Because of the focused efforts of firms like IBM, Microsoft and AT&T, text-to-speech capabilities have evolved dramatically in naturalness, variety and intelligibility. AudioEye, for example, offers both Microsoft and AT&T's text-to-speech applications. But considerably less focus has been exerted on enabling technologies that facilitate mass market use of TTS over the internet. A lack of navigational tools surrounding TTS represents a greenfield opportunity for the Company to fill an unmet need. Unlike experimental speech recognition Internet browsers, AudioEye's keystroke navigation is not hindered by the poor recognition and background noise that plagues voice command technologies. The complementary nature of the AudioEye browser supports strategic business and bundle relationships with a variety of leadership companies.

AudioEye Highlights

- AudioEye's media creation and content management software allows website owners to faithfully render Internet sites in completely audio format
- Breakthrough Patent Pending Tone and Keystroke Technology
- Large and growing market for tools allowing internet accessibility for the disabled or visually impaired supported by government legislation.
- Proven, experienced management Team. Our senior management has over 100 years of collective experience in the software, financial services, and broadcasting arena.
- Key initial clients including Congressman JD Hayworth, a senior representative who will provide visibility for the need for 'assistive technology' in his home state of Arizona, as well as introduction to other members of Congress.
- Repeatable and sustainable subscription based business model.
- Our clients assume the operational responsibility for the software. Audio's focus is on sales, training, and next generation software development
- Organic growth is based on sales of the existing software and the development of partnerships

AudioEye Risk Factors

- The market for internet accessibility applications is in its infancy.
- The fast pace of technology change
- As a result of limited operating history, the company financial data are projections that can be used for business evaluation.

Management Team:

President: Name to be provided after initial discussions.

AudioEye's President is an investor in the company and is currently running a $350m market segment for a large corporation. The President will assume full-time responsibilities with Audio-eye beginning the 2nd quarter of 2004. He has extensive business management experience at many levels. A technical savvy business development expert familiar with large operational projects to smaller quick to market project initiatives. He has run divisions of all sizes within multi-million dollar organizations, as well as bringing a startup firm to profitability and industry leading positions. With a track record strategic success in product/market development, online services, and sales, he has expertise and skills in growing a business organically or through acquisition/partnerships. A belief in the AudioEye technology, its founders, and the social contribution AudioEye can make provide the rationale for coming to AudioEye.

CEO/CTO, Nathaniel Bradley
AudioEye's CEO is Nathaniel Bradley he is one of the founders of AudioEye and chief architect of the AudioEye Surf-by-Sound™ technology. He has been recognized as a

leading innovator and entrepreneur in the Streaming Media Industry and has engineered global multimedia Internet marketing communications for fortune five companies throughout the United States and Canada. He has developed successful Streaming Media software applications that include StreamSafe™, a secure database community management software, StreamSyndicate™ a digital rights management software, and WebcastWizard™ an Online collaboration software used by likes of Motorola, Texas Instruments, General Dynamics, IBM, Honeywell, Notre Dame University, The Roman Catholic Church, Arizona State University, and many other leading organizations. He has also developed methodologies and has provided the complete management for 24x7 Internet Radio operations, custom Wireless (Wifi) Video and audio applications, Internet Pay-Per-View and many active and industry leading On-demand content distribution models.

audio eye

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Who is Kino Communications

- Developer of digital media infrastructure
- Used by content owners/aggregators and network operators to create and distribute digital media over the Internet
- Licensor/developer of proprietary, patent-pending media creation software and audio browser called AudioEye
- Kino's software product portfolio also includes online collaboration, meeting and conferencing tools; digital rights management software for Internet multimedia; rich media infrastructure for secure transmission of video and audio over private and wireless mesh networks

A **Big** Idea: the 2nd Internet Revolution

- AudioEye's technology is a private market solution to an important public policy problem
- The 1st internet revolution left many behind
- The elderly, blind, low vision, learning disabled and non-English speakers have not fully participated
- They have been excluded from the new
- Media experience within networked environments
- But it's morning on the internet again…

- AudioEye's patent-pending technology is a breakthrough, private-market solution that addresses two important problems with large social ramifications:
  - Improving the lack of meaningful internet accessibility for large sections of the elderly, blind, low vision, print disabilities, learning disabled and non-English speaking communities
  - Enhancing the quality of internet mobility for sighted users via wireless device

- AudioEye is the first solution of it its kind to address both accessibility and mobile services content delivery through streaming audio/keystroke navigation
- While AudioEye reflects our core values of social entrepreneurship, the technology has powerful mass market wireless application
- The intellectual property surrounding streaming internet navigation, and the software tools to create it, are the product of over two years of experimental R&D and represent technology differentiation that is sustainable
- The AudioEye solution has broad implications for educational, government, defense, E-learning, E-commerce, banking/brokerage, corporate, industrial, entertainment, health care, travel/hospitality, and community customers

- Proprietary, 1st to Market Technology
- An Audio Internet Browser and Media Creation Developer Tool Suite
- Addresses an Important Public Policy Problem – Internet Accessibility
- Market Size for Solution is Large
- Regulatory Wind is at Our Back
- Supported by Favorable Demographic Trends

Favorable Macro Conditions for Change

- The emergence of critical mass in residential broadband usage
- Wireless Internet device growth
- More pervasive and high-quality Internet connectivity
- The rise of digital media content offerings,
- The computational intelligence of today's wireless devices
- The blending of consumer electronics and personal computer technology

- Highly favorable demographics (an aging U.S. population and a large influx of non-native speakers)
- An increasingly stringent set of global accessibility regulations/legal precedent
- The pervasiveness of high-quality, complementary speech technologies

Compliments Existing Technologies

- Extensive development and advancement in the areas of Text-to-Speech (TTS) engines and voice recognition by large players such as IBM, Microsoft and AT&T
- These technologies can verbalize computer text
- Used primarily in call centers and medical transcription
- Some early development also in voice command navigation technologies - but hindered by poor recognition and background noise

Goes the Last Mile - Navigation

- Considerably less focus on enabling technologies that facilitate mass market use of TTS over the Internet
- A lack of navigational tools surrounding TTS represents a greenfield opportunity – an unmet need
- AudioEye's navigational audio, the ability to "surf by sound", bridges together the latest in advanced streaming media infrastructure with the significant gains in speech technology

A New Set of Fundamental Rights

- Access to information is now a *fundamental* right of citizenship and a key component of personal development
- In an era of tight fiscal budgets, the internet will become *the* central source for information and access to elected officials and essential government services – such as voting, tax, public safety, social programs, education, transportation, retirement, health care, licenses/permits, judicial, and family service information
- In the private sector, the internet is critical to full participation in free expression, travel, social networking, workplace productivity, personal finance, e-learning , skill development, and employer health/retirement/pension benefits
- On average, young people ages 13 to 24 said they spent nearly 17 hours online each week, not including time used to read and send electronic mail, according to Harris Interactive

AudioEye: The Potential for Near Universal Internet Accessibility

- The missing ingredient to greater accessibility: a navigation system/on-ramp that ties streaming and accessibility technology together on the internet
- Often times, society defines problems too narrowly
- Internet accessibility is a problem everyone shares – sighted and visually impaired; tech savvy and computer novice; elderly and young children; special needs and honor students; native and non-native speakers

- Innovative approach to a problem in need of a solution (for users and business) – an empowerment tool for self-sufficiency and a gateway to an untapped, powerful market segment
- Audio Eye great example of public-private solution
- Relies on proprietary, patent pending technology
- Enhances existing technology like text-to-speech software, screen readers, and streaming media
- Supported by large, clear demographic trends
- Regulatory wind is at the company's back
- Multiple revenue streams – software license, application service provider, community gateway

Gives Site Owners a Solution

- The current text-based internet is based on visual cues
- Most websites were originally created with little or no awareness of disability access options
- Designers must forgo some of the richest content presentation to adhere to screen reader accessibility
- In light of the legal risk and negative publicity, the mandate to make such sites accessible has led to enormous expense in retrofitting these designs- including adding electronic "ramps" after the designs were completed
- Even after the modifications, a majority of sites are still difficult to navigate for the visually impaired to navigate using traditional technologies
- Site owners can now achieve best practices accessibility without removing rich functionality intended for sighted users such as flash animation or graphics.

AudioEye: from the Perspective of Internet Users

- A revolutionary web browser (i.e. software needed to retrieve and display information and content from the Internet) and media creation software
- AudioEye unites speech technologies and digital media to faithfully render Internet sites in audio format
- The AudioEye browser allows users to navigate the internet solely by listening to streaming audio prompts and performing simple keystroke commands from any Internet enabled device
- All navigation, content, search, form fill-out, and transaction capabilities that are currently experienced on an existing text-based site can be easily converted by site owners to streaming audio-based format using our suite of media creation software tools

Category-Creating, 1st to Market Technology

- AudioEye is proprietary, patent-pending streaming audio technology
- Standards-based technology on the Microsoft.net platform
- AudioEye extends the streaming experience from passive listener to active, robust Internet navigation
- Changes perception of the web as a primarily visual medium
- From the perspective of internet users, it's extremely easy to use – a free, "*Surf by Sound*" web browser
- Think "Moviefone meets the internet"
- Users can navigate AudioEye-enabled sites like an automated telephone voice mail system – listening to audio prompts and making selections via keystroke or keypad

- The internet's first audio-based navigation system
- Does not require user to purchase any additional hardware
- Tone sound for participating sites
- Uses streaming audio prompts and simple keyboard-defined (as opposed to mouse-defined) commands
- Intuitive for the user – very similar to a phone bridge
- Allows for the presentation of unique, individual human voices
- Makes e-commerce possible by employing "wallet" technology and easy-to-follow audio prompts
- The software is free to end users with download (like Adobe, Real Player, etc.) Site owners license the software for an annual subscription fee
- Audio Eye is easily implemented, simply sits on top of a site's existing security system, etc.
- Audio Eye is a network-based solutions that allows for portability of technology across multiple locations and devices

Accessibility Without Burden or Boundaries

- Does not require the purchase of *any* additional hardware, such as a screen reader or magnification device
- Consider the alternative: according to President George W. Bush, “Personal computers configured with assistive technology can cost anywhere from $2,000 to $20,000,”
- About 64 percent of students from families with an income of $75,000 or more used a computer at home for school work compared to 28 percent of students from families with incomes of $20,000 to $24,999. Source:the National Center for Education Statistics
- The AudioEye browser is compatible with all streaming media technologies, including Real, Windows Media, and Quicktime
- AudioEye is network-based, so users can seamlessly utilize the browser, and all its functionality, across all their potential internet points of entry - school, home, office, library or mobile device

AudioEye Front-End: How to *'Surf by Sound'*

- AudioEye navigation is always the same regardless of the site or type of internet-enabled device used for access (computer, phone, kiosk, etc.)
- When entering an AudioEye-enabled web site, users hear a prompt on the text-based home page alerting them that they can experience the same site in audio format by pressing the number "1" key
- The "number" keys allow users to select specific menu items or content
- The "arrow" keys allow users to go back, forward, or replay specific menu or content items
- "Number" and "arrow" keys, as well as "wallet" technology can be used to complete registration forms, enter passwords, or conduct e-commerce transactions

Breakthrough Technology

- Once the AudioEye browser is engaged by the user, the stream is “live” at all times and awaiting keystroke commands – streaming audio navigation files connecting streaming content files (audio only or video with corresponding audio)
- AudioEye’s ability to keep the streaming connection “alert” and awaiting a keystroke command even after extended periods of inactivity, represents a significant breakthrough in streaming technology
- This discovery represents the “secret sauce” behind the AudioEye technology

Also Represents and Opportunity for the Internet's Key Stakeholders

- AudioEye is "all streaming, all the time" proprietary technology
- A wealth of current live event and premium entertainment streaming audio content *already* exists but can't be meaningfully accessed by the visually impaired
- AudioEye can dramatically increase the demand for bandwidth, telecom equipment, and broadband services
- Opportunity to sell a new class of more effective internet advertising, sponsorships, and paid search
- Wireless service providers and handset makers can fully realize the revenue potential from advanced features and subscription services
- A new wave of audio web design professionals will emerge

Advantages of AudioEye over Other Assistive Technologies

- Portability: AudioEye also differs from accessibility hardware solutions in that is a server-based, network solution allowing users to seamlessly utilize the browser, and all its functionality, for any AudioEye-enabled content across all potential internet points of entry - school, home, office, library or mobile device
- This is particularly important for the education marketplace where many students can't afford costly assistive technologies for home use
- It is also increasingly essential for workplace productivity where many firms are shifting to a wired campus approach, requiring workers to collaborate in a variety or formal and informal settings throughout a facility

Advantages of AudioEye over Other Assistive Technologies

- Personalization: Despite advancements in the quality and variety of TTS, screen readers are limited to presenting the rich internet in a redundant, computer-generated voices. The lack of voice variety can reduce retention.
- AudioEye permits the introduction of distinct human voices – including celebrity endorses, elected officials, company executives, educators, etc.
- Navigational audio gives site owners the ability to leverage recognizable voices to guide internet users through the site experience.
- It can also be used to reinforce offline branding and television/radio advertising efforts.

Advantages of AudioEye over Other Assistive Technologies

- Interaction: Rather than simply “reading” internet content like most accessibility technologies, AudioEye allows users to interact with enabled sites.
- This includes full form fill-out, polling, and transaction capabilities with audio play-back features to ensure the accuracy of responses. AudioEye technology enables straightforward audio presentation of text fields, radio buttons, and selection menus.
- Because AudioEye is built using Microsoft’s .Net technology, credit card and address information can be stored and easily retrieved for frequent use.

Advantages of AudioEye over Other Assistive Technologies

- Ease of Use: AudioEye navigation is always the same regardless of the site or type of internet-enabled device used for access (computer, phone, kiosk, etc.).
- It closely mimics familiar everyday telephone-based experiences such as voicemail directories, automated prescription refill systems or transaction services like Moviefone – audio instructions supported by keystroke navigation and commands.

Advantages of AudioEye over Other Assistive Technologies

- More universal design: The four main categories of disabilities are visual, hearing, mobility and learning disabilities AudioEye's straightforward audio cues and keystroke commands can be used by people with the widest possible range of capabilities/needs to access content at a variety of speed and skill levels. For example, students with cognitive or learning disabilities benefit from a consistent design and redundant input.
- AudioEye's flexibility is crucial for special education teachers who must often address the diverse needs of students with learning disabilities, vision impairments, autism, mental retardation, and Tourette's syndrome within a *single* classroom curriculum environment.

Advantages of AudioEye over Other Assistive Technologies

- Immediacy: Using the AudioEye system, site owners (including non-technology professionals) can publish new audio content to the web without any html, etc. programming. For example, a teacher can record a day's lesson using a personal digital recorder (such as an Olympus product), download the file to her desktop by simply placing the device in a cradle, and upload to the AudioEye administrative panel.

Advantages of AudioEye over Other Assistive Technologies

- Customization: Because AudioEye is network-based, site owners can control access to specific content or site areas via password protection. A teacher, for example, can easily insert messages or instructions for specific students within administrative tree structure. Those messages are accessible only through the student's personal password, allowing for the creation of highly individualized learning plans – allowing students to engage in more productive self-study or providing parents a roadmap for how to help reinforce specific lessons.
- It can also be used to help schools comply with the strict parental notification requirements established under the No Child Left Behind Act, distributing information on attendance, emergency notification, grades, progress reports, invitations to school events, weekly class curriculum and activities, report card announcements, physical and shots reminders, etc.

Mobility

- "One of the key challenges today is to architect around mobility. It's not just wireless, it's the ability to stand up an organization or ad hoc capability at any time. These needs and these problems are true not just for the Intelligence Community, it's true for any large enterprise in the world. This is the huge opportunity for vendors and for government.“ - *Gilman Louie, CEO In-Q-Tel*

AudioEye as Mobile Browser

- Many sighted users find it difficult and/or inconvenient to read text on the small footprint display of internet-enabled wireless devices
- A new study commissioned by Microsoft and conducted by Forrester Research, found that one-third of U.S. adults aged 18 to 64 have trouble reading ordinary newsprint
- In addition, a variety of tasks, from everyday activities like driving to intense battlefield or emergency services situations, demand extended visual focus and concentration - and are therefore not conducive to safely receiving visual cues from a wireless device
- Lighting often also makes it difficult to read the screen.

Tech-Savvy Sighted Lack Meaningful Portability

- Tech-savvy sighted users have a low quality, limited functionality experience when they currently access the internet via a mobile device such as a cell phone
- China, for example, essentially skipped the first internet cycle and went directly to a wireless internet infrastructure – yet compelling wireless content is limited
- Also, point and click mouse technology restricts sighted users' ability to effectively multi-task (cook dinner, etc.) when surfing the internet
- The potential exists for internet integration within a satellite radio in-car dashboard or for a variety of military/force protection applications

Convenience

- Others sighted users simply feel overburdened by the demands of work-related computer usage and are reluctant to interact with their wireless devices for extensive reading
- The internet has also become so content rich with original breaking news, opinion blogs, alternative press, and premium services that many people don't have time or opportunity to read everything they would like to regularly access
- Aside from mobility, AudioEye also facilitates non-computer multi-tasking. For example, the AudioEye browser enables users to perform simple lifestyle tasks like cooking dinner or paying bills while listening to internet content they would not otherwise have the time or opportunity to enjoy
- This capability allows a variety of opinion, newspaper, news and information sites to effectively create a radio-like broadcast from their existing text-based site content
- Users can connect to their favorite streaming internet content via AudioEye by entering a simple "key number" sequence (similar to AOL's "key word")

Mass Adoption & Implementation of AudioEye as Mobile Browser

- The Company intends to work closely with wireless carriers, automotive OEM's, on-board device manufacturers, satellite radio providers, and wireless mesh network manufacturers to promote wireless integration of our technology
- The fact that AudioEye was built using Microsoft's .Net framework will accelerate the ability to get streaming navigation onto new devices quickly and securely

Site Owners Can Create A Near Audio "Mirror" of Their Current Site

- Site owners pay an annual subscription to license AudioEye's media creation and publishing software
- Since AudioEye is simply a browser or peering point that sits on top of existing text-based pages, site owners maintain their existing security controls and hosting solutions
- Do not need to incur the cost of accessibility remediation or repair for their existing text-based web site
- Can achieve accessibility without removing rich functionality from existing site that was intended for sighted users such as flash animation or graphics

Audio Navigation Version of a Site May Even Be More Robust Than Text Version

- Can “publish” new audio content to the web without any programming – simply record using a personal digital recorder (such as Olympus), download the file to your desktop, upload in the AudioEye admin panel
- Since no html programming is required, non-technology professionals can easily produce and publish site content.
- Allows for greater immediacy
- Navigational audio also gives site owners the ability to leverage the recognizable voices of celebrity endorsers, artists or personalities to guide their internet users through the site experience

AudioEye: from the Perspective of Site Owners

- AudioEye media creation software, standards-based technology built on the Microsoft.Net platform, combines different types of media files into one formatted navigation system
- Users may choose to outsource conversion and audio navigation updating to AudioEye under an ASP arrangement, or they can license the software for a self-managed solution
- It includes an easy-to-use content management system that requires little additional effort on the part of webmasters and allows sites to maintain their existing hosting solutions and security protocols

AudioEye: from the Perspective of Site Owners

- Site owners can then utilize live, human pre-recorded audio, or the latest Text-To-Speech (TTS) engines within the AudioEye system to create a mirror audio image of their existing text-based site
- Because of the focused development efforts of firms like IBM, Microsoft and AT&T, Text-to-Speech capabilities have evolved dramatically in naturalness, variety and intelligibility
- When using Text-to-Speech capabilities, operators simply cut and paste text into the AudioEye administrative panel and then select from a variety of voices and languages including English or Spanish

AudioEye: from the Perspective of Site Owners

- The files for each section of the site are uploaded and converted for use within the AudioEye browser.
- MP3 Files are used for the navigational audio portions of a site .
- .WAV files are automatically created for the “heavier” content areas within the site tree map.
- XML tags can also be used to automatically pull and refresh frequently changing, dynamic text content, converting to audio via text-to-speech voices.

AudioEye Back-End: How to Map, Convert, and Maintain

- Using the AudioEye administrative software, an initial site analysis is conducted, mapping each menu selection and content item to a tree-like hierarchy
- The site's home page and main menu navigation sit at the top of the hierarchy
- Audio files are created, uploaded, and converted for each section of the site and for use within the AudioEye browser
- A human voice can read and record text, or text-to-speech software can be employed to easily cut, paste, and convert content. XML tags can also be used to automatically pull and convert frequently changing, dynamic content into audio via text-to-speech software.
- MP3 Files are used for the navigational audio portions of a site, .WAV files are created for the "heavier" content areas of a site

AudioEye: from the Perspective of Site Owners

- Multinational corporations with a global footprint can communicate to customers, shareholders, and media in a fully accessible manner and in a variety of text-to-speech generated languages
- AudioEye can also be effectively deployed on intranets and employee-facing sites that provide information on company benefits, policies and procedures
- AudioEye's ability to deliver fully compliant, culturally sensitive, open accessibility for a diverse set of internet users offers a powerful value proposition for enterprise customers

Low-Tech and/or Low-Vision Elderly Have Not Participated

- High barriers for the elderly become computer users (cost, time involvement, fear)
- Many elderly find computer interfaces cumbersome and threatening due to their complexity
- The next generation of seniors will be much more familiar with the internet – but will increasingly suffer physical, mental, and cognitive impairments due to enhanced longevity
- Low-Tech Elderly: making up 16% of the population (average age is 73 years), only 12% use the Internet - yet their average monthly spending on information goods is $82 (Source: Pew Internet and American Life Project)
- 39% have a cell phone, 68% subscribe to cable, 57% read the newspaper daily, and 78% watch TV news on the average day (Source: Pew Internet and American Life Project)

A Key Tool for Helping the Elderly Remain Independent

- Elderly people are living longer – 76 million baby boomers are nearing retirement
- They often live alone
- Personal computing is foreign to the current generation of seniors, and the mouse is difficult for them to manipulate
- The next generation of seniors will be much more familiar with the internet – but will increasingly suffer physical, mental, and cognitive impairments due to enhanced longevity
- 76 million baby boomers are nearing retirement age. 6.5 million Americans age 55 or older experience some form of vision loss; by 2030 this number is estimated to double

AudioEye Provides a Clear, Familiar Navigation Mechanism for Seniors

- The current text-based internet is based on visual cues
- However, older people show a reduction in the width of their visual field, their ability to see fine details, and their ability to process visual information (Source: Brown, Hillary. “Accessibility and Usability of Information Technology by the Elderly”)
- Senior advocates have long lobbied for internet interfaces that closely mimic the activities the elderly experience in daily life.
- The AudioEye experience is very similar to the automated telephone prescription drug, pharmacy refill system used as part of most senior’s regular health care routine

Workplace Productivity Will Become an Important Issue

- A 2001 study by the U.S. Department of Commerce, found that 68 percent of U.S. workers now use some type of computing or Internet device in their daily jobs
- According to Microsoft, between now and 2020, the number of workers age 55 and over will increase by about 80 percent, to more than 33 million
- By just 2008, 40 percent of the workforce will be comprised of baby boomers who will, in growing numbers, experience physical impairments due to the natural aging process

The Internet Has Not Improved Special Education Instruction

- 6.6 million children (> 10% of K-12 children) receive special education in the U.S.
- Individuals with Disabilities Education Act (IDEA) calls for the federal government to contribute 40 percent of the average daily expenditures schools dedicate to teaching students with disabilities.
- Since IDEA first became law in 1975, the actual commitment by the feds never has exceeded more than 18 percent of these costs

AudioEye Responds to the Differences in Learning Among Students

- Special education teachers must often address the diverse needs of students with learning disabilities, vision impairments, autism, mental retardation, and Tourette's syndrome within a *single* classroom environment
- Frustrating experience for teachers – half leave the profession within 5 years
- Strong demand for universal design - products that can be used by people with the widest possible range of capabilities, either directly or through the use of assistive technologies
- Audio Eye easily supports the creation of audio, internet-delivered, individual student learning plans

Mislabeling Can Also Result From Information Presentation

- The more differentiated use of media for instruction reveals that individuals who are defined as “learning disabled” within print-based learning environments are not the same individuals who are defined as “learning disabled” within video- or audio-based learning environments
- Language barriers also exacerbate the problem as many Hispanic children are being mislabeled in the special education system
- When comparing the combined rates of children rates of children with Emotionally Disturbed, Mentally Retarded, and Specific Learning Disability labels, both American Indian and Hispanic males are labeled at a rate 64% higher in schools that are 75% or more white than in schools that are 25% or less white (source: Goldwater Institute, May 10, 2004)

Federal Law Raises the Stakes

- Under the federal Leave No Child Behind law, under-performing special education students on standardized tests can have consequences for the entire school
- Districts are required to meet federal standards for math, reading, attendance and graduation within each of eight distinct, narrowly-defined student categories - African-American, White, Latino, Asian, Native American, students learning English, students living in poverty *and special education* students
- For all students, the law also requires dissemination of information to parents (some of whom are themselves blind, low vision, etc.)

"First Wave" Educational Technology Infrastructure in Place

- But being under-utilized for accessibility because of lack of powerful "second wave" applications
- In 2001, the average public school contained 124 instructional computers. About 99 percent of schools had access to the Internet in 2001. Source:the National Center for Education Statistics
- The proportion of elementary and secondary school students using computers at school rose from 70 percent in 1997 to 84 percent in 2001. Source:the National Center for Education Statistics

Sighted Children

- A consistent criticism of children's internet content is a lack of consistency among icons makes it difficult to back up or jump to other pages

Pushback on Educational Publishers and Content Providers

- The Instructional Materials Accessibility Act of 2002 (H.R. 4582 and S. 2246) is aimed at an efficient system for acquiring and distributing instructional materials in a variety of specialized formats, including Braille, synthesized speech, digital text, digital audio, and large print.
- "Far too often, blind and visually impaired students must wait months while their local school districts convert their textbooks into Braille, and at the same time school districts face exorbitant costs for these conversions" - Sen. Christopher Dodd

Size of the Vision Impairment Problem

- According to the National Federation for the Blind, an estimated 1.1 million people in the U.S. are blind. Each year 50,000 more will become blind from things such as Glaucoma, cataracts, and diabetes.
- Ten million Americans age 55 or older also experience severe vision loss (“low vision”) brought on by macular degeneration; by 2030 this number is estimated to double
- 76 million baby boomers are nearing retirement age. At present, there are an estimated 800,000 visually impaired or “low vision” persons currently using the Web – resigned to a poor quality, costly experience.
- According to the President's Committee on Employment of People with Disabilities, 54 million individuals with permanent disabilities have a combined income of nearly $700 billion. Of that figure, $175 billion is discretionary income.

- “For Americans without disabilities, technology makes things easier. For Americans with disabilities, technology makes things possible.” – The National Council on Disability
- “The excitement in the last decade was great, it got us a lot of connectivity, moved some things forward, but the really tough problems are the ones that we'll solve this decade." – MSFT Chairman Bill Gates

- “The brilliant graphics that add life to many web pages can make it difficult for a visually impaired person to get the information he or she needs from a web site.” --- President George W. Bush; June 19, 2001
- “I will ask Congress to increase funding to bring assistive technologies to market more quickly, to help make them more affordable for the people who need them, and to speed research in developing new technologies.” – President George W. Bush
- "Americans with disabilities have a great deal to contribute to our national security. In this era of continuing, advancing technologies, there are possibilities to harness their talents in ways that were previously inconceivable." – Donald Rumsfeld, Secretary of Defense, June 20,2001

- The unemployment rate for Americans with disabilities hovers at 70%
- Home ownership rates for Americans with disabilities are in the single digits

Section 508
Rehabilitation Act of 1998

- Section 508, an amendment to the Rehabilitation Act of 1973, requires that individuals with disabilities, who are members of the public seeking information or services from a Federal department or agency, have access to and use of information and data that is comparable to that provided to the public without disabilities.
- The legislation is also aimed at improving the working conditions of the roughly 120,000 federal employees with disabilities
- In addition, the federal government requires vendors selling to the government be Section 508 compliant, unless covered by a provable exception.
- A number of states, including Arkansas, California, Maryland, New York, Texas and Virginia have adopted similar legislation.

Other Landmark Accessibility Legislation

- Section 504 of the Rehabilitation Act of 1973
- The Individuals with Disabilities Education Act of 1975
- Section 508 of the Rehabilitation Act of 1988 and 1998
- The Americans with Disabilities Act of 1990 - The National Council on Disability has recently issued a report recommending that the ADA be amended to cover the ***private-sector*** Internet

A Global Problem & Movement

- Canada and several European Union countries have similar legislative mandates
- England's Disability Discrimination Act of 1995 gives disable people access to everyday services and classifies websites as a "service"
- However, a 2004 investigation by Britain's Disability Rights Commission revealed that more than 800 out of 1000 tested UK websites were unusable by disabled people
- The Italian parliament ratified the"Stanca Law" in December, 2003 requiring all government websites be fully accessible to serve the needs of the country's three million disabled individuals

Private Litigation Risk

- AOL Litigation: The NFB sued America Online in 1999, saying the Interet service's proprietary software interfered with the ability of blind people using a screen reader to access the AOL system.
- The first successful internet accessibility lawsuit (Barry Maguire vs Sydney Olympics Organizing Committee) netted the litigant just $20,000 in damages as the Sydney Organising Committee for the Olympic Games was found to have engaged in unlawful conduct by providing a web site which was to a significant extent inaccessible to the blind

- In February 2001, President George W. Bush announced his New Freedom Initiative to tear down barriers faced by Americans with disabilities
- Included in the program is $120 million over three fiscal years (FY 2002 through FY 2004) earmarked to promote the development of assistive and universally designed technology and to fund alternative financing programs, such as low-interest, long-term loans to put technology into the hands of more people with disabilities

- Even a highly-skilled blind person with state-of-the-art technology can only access between 20 percent and 40 percent of what's on the Internet
- Blind and persons with partial sight have different needs, but share many of the same challenges
- Frequent complaints include inaccessible forms, bad page organization, inaccessible flash, pop up windows, inaccessible menus (Javascript or others), bad link texts, too much information on the page, and images without alternative text (source: R. Romero and V. Ávila, Department of Developmental and Educational Psychology, Universitat de València Estudi General).
- Software, music downloads are also nearly impossible

Define “Accessibility” to Include Needs of Non-English Speakers

- While 12% of the U.S. population or 33.5 million people are Hispanic (the nation’s largest minority group), Spanish language sites still only make up single digits of all the content on the Web
- Yet Media Metrix research identified 12.3 unique Hispanic online users (home, work, and university) in the United States, plus an additional 7.2 million in Mexico.
- Finally, Global Reach estimates that 7.2 percent of Internet users are native speakers of Spanish, making it the fourth most popular online language
- AudioEye gives site owners an easy way to make their web offerings culturally relevant to the Hispanic community.

Competing Technologies

- Screen-reading Software: Freedom Scientific's JAWS and GW Micro's Window-Eyes - neither was designed with the needs of students (too complex) or the budgets of schools in mind
- Nextup.com's TextAloud product allows students to hear text spoken through a variety of voices by copying any amount of text from a document and pasting it into the open TextAloud program window
- Premier Assistive Technology's Text-to-Audio program can read files in several types of file formats, including Microsoft Word, plain-text and rich-text format, HTML, and PDF files
- Texthelp System’s Browsealoud allows users to hear TTS voices by scrolling their mouse over the text that they want read to them
- Opera Software is developing a speech recognition browser that leverages IBM’s ViaVoice technology

Current Limitations to AudioEye

- Site owners/administrators can’t include links to non-AudioEye content
- Because the AudoEye navigation system is always “on” awaiting commands, users can’t access other web content, desktop applications when the audio browser is engaged

Content Creation

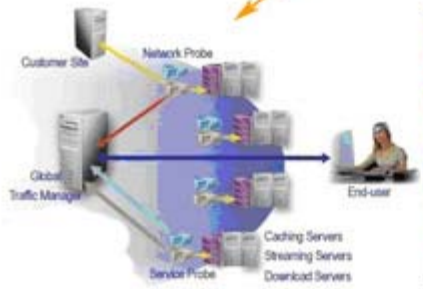
Text Streaming mpeg Digital Audio Devices

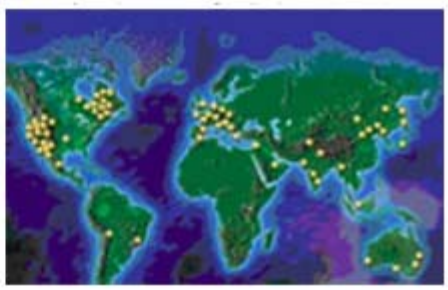
Conversion
Off Load
Authoring
Traffic Mgmt

audio eye
Surf By Sound™

Acct Creation
Search
Admin Panel
Reporting

Off Load to CDN





Wireless Integration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